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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/919,387 | 07/31/2001 | Martin A. Wand | TI-31096 | 3406 |
| 23494 | 7590 | 07/26/2005 | EXAMINER | |
| TEXAS INSTRUMENTS INCORPORATED | | | ROBERTS, BRIAN S | |
| P O BOX 655474, M/S 3999 | | | ART UNIT | |
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| 2662 |
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DATE MAILED: 07/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/919,387

Applicant(s)

WAND ET AL.

Examiner

Brian Roberts

Art Unit

2662

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 July 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-26 have been examined.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-12 and 22-26 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- In reference to claims 1 and 23

Claims 1 and 23 recites the limitation "isochronous data flow". There is insufficient antecedent basis for this limitation in the claim. The applicant fails to have previously introduced an "isochronous data flow", so it is unclear what "isochronous data flow" the applicant is referring to.

- In reference to claim 22

Claim 22 recites the limitation "said mechanism". There is insufficient antecedent basis for this limitation in the claim.

- In reference to claims 2-12 and 24-16

Claims 2-12 and 24-26 are rejected as being dependent on claims 1 and 23, respectively.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-2 and 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Isaman et al. (US 4549292)

- In reference to claim 1, as best understood

Isaman et al. teaches a method for efficiently and simultaneously transferring both isochronous information (e.g. periodic voice samples) and nonisochronous data (blocks of characters in a computer data bank) in a computer network (column 1 lines 11-16) that includes:

- Sending a request prior to writing or receiving data in a isochronous frame (column 6 lines 13-14)
- Sending messages back telling which slots in the isochronous frame to use (column 6 lines 15-17)
- Serially transferring nonisochronous frame by inserting the nonisochronous frame in between isochronous frames (abstract)
- In Figure 3, a buffer (34) to receive nonisochronous data (column 3 lines 56-58)

Isaman et al. does not teach requesting to transfer nonisochronous data.

Isaman et al. teaches a method of transferring nonisochronous data in a computer network where isochronous frames override any other data transfers that may be occurring. (column 2 lines 54-63)

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the method of Isaman et al. to include requesting to transfer nonisochronous data in a system with nonisochronous and isochronous data transfer because it would prevent the nonisochronous data frames from interrupting a time critical isochronous data frame flow.

- In reference to claim 2, 4, 5

Isaman et al. teaches a method that covers substantially all limitations of the parent claim. Isaman et al. further teaches transmitting a multi-block of data (column 1 lines 45-49) between stations (claim 5 - isochronous-signal processor) (Figure 3) where the nonisochronous data is transmitted in between isochronous frames (column 2 lines 27-29)

- In reference to claim 6

Isaman et al. teaches a method that covers substantially all limitations of the parent claim. In Figure 3, Isaman et al. further teaches receiving nonisochronous data in a buffer (34) (column 3 lines 56-58)

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6. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Isaman et al. (US 4549292) in view of the admitted prior art.

- In reference to claim 3

Isaman et al. teaches a method that covers substantially all limitations of the parent claim.

Isaman et al. does not teach using the transfer method to transfer data in between a digital controller connected to an isochronous-signal processor via a serial digital interface.

In Figure 1, the admitted prior art teaches

- An audio codec slave (102) communicating with a digital controller (104) over a AC-Link (106)

It would have been obvious to a person of ordinary skill in the art at the time of the invention to apply the method of Isaman et al. to the system as taught by the admitted prior art because it allows transferring nonisochronous data frames during periods of time where there are no isochronous data frames being transferred.

7. Claims 7-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Isaman et al. (US 4549292) in view of Schneider et al. (US 4514822)

- In reference to claim 7-12

Isaman et al. teaches a method that covers substantially all limitations of the parent claim.

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Isaman et al. does not teach receiving a total word count value with the transfer request or verifying a number of words received with the word count value.

Schneider et al. teaches a method of transferring words that includes:

- Loading a word counter with the number of words contained in a word block
- During every word transfer the contents of the pointer register and the word counter are modified until the desired number of words defined by the initial contents of the word counter have transferred. (Verifying a number of words received) At this point, the word counter informs the central unit that the word block is complete (column 2 lines 16-20) (Acknowledging the processing of the block of data)

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the method of Isaman et al. to include a word counter total, a word counter to verify the number of words received, and informing the central unit that the word block is complete as taught by Schneider et al. because the word counter keeps track of the words received to ensure the complete transfer of a word block.

8. Claims 13-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Audio Codec '97 Specification in view of Isaman et al. (US 4549292)

- In reference to claim 13, 16, 18

The Audio Codec '97 Specification teaches:

- In Figure 1, A digital interface providing a Audio Codec Link (serial digital link) to a digital controller

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- In Figure 1, AC '97 Registers 64x16-bits that includes control/status register index 26h (page 45 section 6.3.11) and data registers

The Audio Codec '97 Specification does not teach a method of both nonisochronous and isochronous data transfer such as audio information, a data buffer for receiving nonisochronous data or explicitly teach a data register.

In Figure 3, Isaman et al. teaches a system and method that includes:

- Nonisochronous and isochronous, such as voice, data transfer (column 1 lines 10-16)
- Register (31) (column 3 lines 56-58)
- A buffer (34) (column 3 lines 56-58)

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the system of the Audio Codec '97 Specification to include a nonisochronous and isochronous data transfer, a data buffer, and register as taught by Isaman et al. because the data buffer and register is used to receive nonisochronous data in a system with nonisochronous and isochronous data transfer.

- In reference to claim 14

The Audio Codec '97 Specification teaches a system that covers substantially all limitations of the parent claim. The Audio Codec '97 Specification further teaches:

- In Figure 1, Analog mixer for processing signals in analog format
- In Figure 1, Digital to analog converts (DAC) coupled between the digital interface and analog mixer

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- In Figure 1, Analog to digital converter (ADC) coupled between the analog mixer and the digital interface

- In reference to claim 15

The Audio Codec '97 Specification teaches a system that covers substantially all limitations of the parent claim. The Audio Codec '97 Specification further teaches:

- In Table 18, A control/status register to indicate ready to transmit or accept

The Audio Codec '97 Specification does not explicitly teach a data register.

In Figure 3, Isaman et al. teaches a system and method that includes a Register (31) (Data Register). (column 3 lines 56-58)

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the system of the Audio Codec '97 Specification to include a register as taught by Isaman et al. because the register is used to receive nonisochronous data in a system with nonisochronous and isochronous data transfer.

- In reference to claim 17

The Audio Codec '97 Specification teaches a system that covers substantially all limitations of the parent claim. The Audio Codec '97 Specification further teaches:

- In Figure 1, An AC-link

- In reference to claim 19

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The Audio Codec '97 Specification teaches a system that covers substantially all limitations of the parent claim. The Audio Codec '97 Specification further teaches:

- In Figure 1, AC '97 Registers 64x16-bits that includes control/status register index 26h (page 45 section 6.3.11)

- In reference to claim 20

The Audio Codec '97 Specification teaches a system that covers substantially all limitations of the parent claim.

The Audio Codec '97 Specification does not teach a command buffer for storing a block of data received or a status buffer for storing a block of data to send.

In Figure 3, Isaman et al. teaches a system that includes:

- A buffer (34) (command buffer) to receive nonisochronous data
- A buffer (35) (status buffer) to store nonisochronous data that is to be transmitted

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the system of the Audio Codec '97 Specification to include a buffer (34) (command buffer) and a buffer (35) (status buffer) as taught by Isaman et al. because the buffer (34) receives nonisochronous data and the buffer (35) stores nonisochronous data that is to be transmitted in a system with nonisochronous and isochronous data transfer.

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9. Claims 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Audio Codec '97 Specification in view of Isaman et al. (US 4549292) and further in view of Schneider et al. (US 4514822)

- In reference to claim 21, 22

The combination of the Audio Codec '97 Specification and Isaman et al. teaches a system that covers substantially all limitations of the parent claim.

The combination of the Audio Codec '97 Specification and Isaman et al. does not teach a word counter for determining the end of a multiple-word block of data.

Schneider et al. teaches a method of transferring words that includes:

- Loading a word counter with the number of words contained in a word block
- During every word transfer the contents of the pointer register and the word counter are modified until the desired number of words defined by the initial contents of the word counter have transferred. At this point, the word counter informs the central unit that the word block is complete (column 2 lines 16-20)
(Verifying a number of words received)

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the system of the combination of the Audio Codec '97 Specification and Isaman et al. to include a word counter total and word counter to verify the number of words received because the word counter keeps track of the words received to ensure the complete transfer of a word block.

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10. Claims 23-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Isaman et al. (US 4549292) in view of the Audio Codec '97 Specification.

- In reference to claim 23

Isaman et al. teaches a method for efficiently and simultaneously transferring both isochronous information (e.g. periodic voice samples) and nonisochronous data (blocks of characters in a computer data bank) in a computer network (column 1 lines 11-16) that includes:

- Sending a request prior to writing or receiving data in a isochronous frame (column 6 lines 13-14)
- Sending messages back telling which slots in the isochronous frame to use (column 6 lines 15-17)
- Serially transferring nonisochronous frame by inserting the nonisochronous frame in between isochronous frames (abstract)
- In Figure 3, a buffer (34) to receive nonisochronous data (column 3 lines 56-58)

Isaman et al. does not teach using the transfer method to transfer data in between a digital controller connected to an isochronous-signal processor via a serial digital interface.

In Figure 1, the Audio Codec '97 Specification:

- An audio codec slave communicating with a digital controller over a AC-Link

It would have been obvious to a person of ordinary skill in the art at the time of the invention to apply the method of Isaman et al. to the Audio Codec '97 as taught by

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the Audio Codec '97 Specification because it allows transferring nonisochronous data frames during periods of time where there are no isochronous data frames being transferred.

- In reference to claim 24, 25, 26

Isaman et al. teaches a method that covers substantially all limitations of the parent claim. Isaman et al. further teaches transmitting a multi-block of data (column 1 lines 45-49) where the nonisochronous data is transmitted in between isochronous frames (column 2 lines 27-29).

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure are:

- Edem et al. (US 5506846) teaches a system that conveys both isochronous data and non-isochronous data by time multiplexing data into a recurring frame structure
- Shaffer et al. (US 5960001) teaches a system with an isochronous and non-isochronous controller to guarantee an isochronous data flow.
- Bell (US 4587650) teaches a method of simultaneously transmitting isochronous and nonisochronous data on a local area network.

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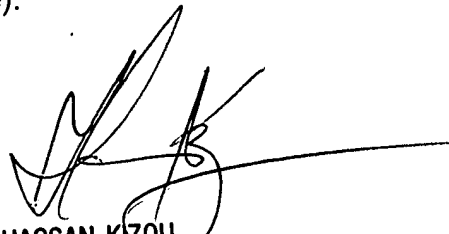
- Bell et al. (US 4637014) teaches a method of inserting and removing isochronous data into a sequence of nonisochronous data characters without slot allocation on a computer network.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Roberts whose telephone number is (571) 272-3095. The examiner can normally be reached on M-F 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BSR
07/12/2005



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